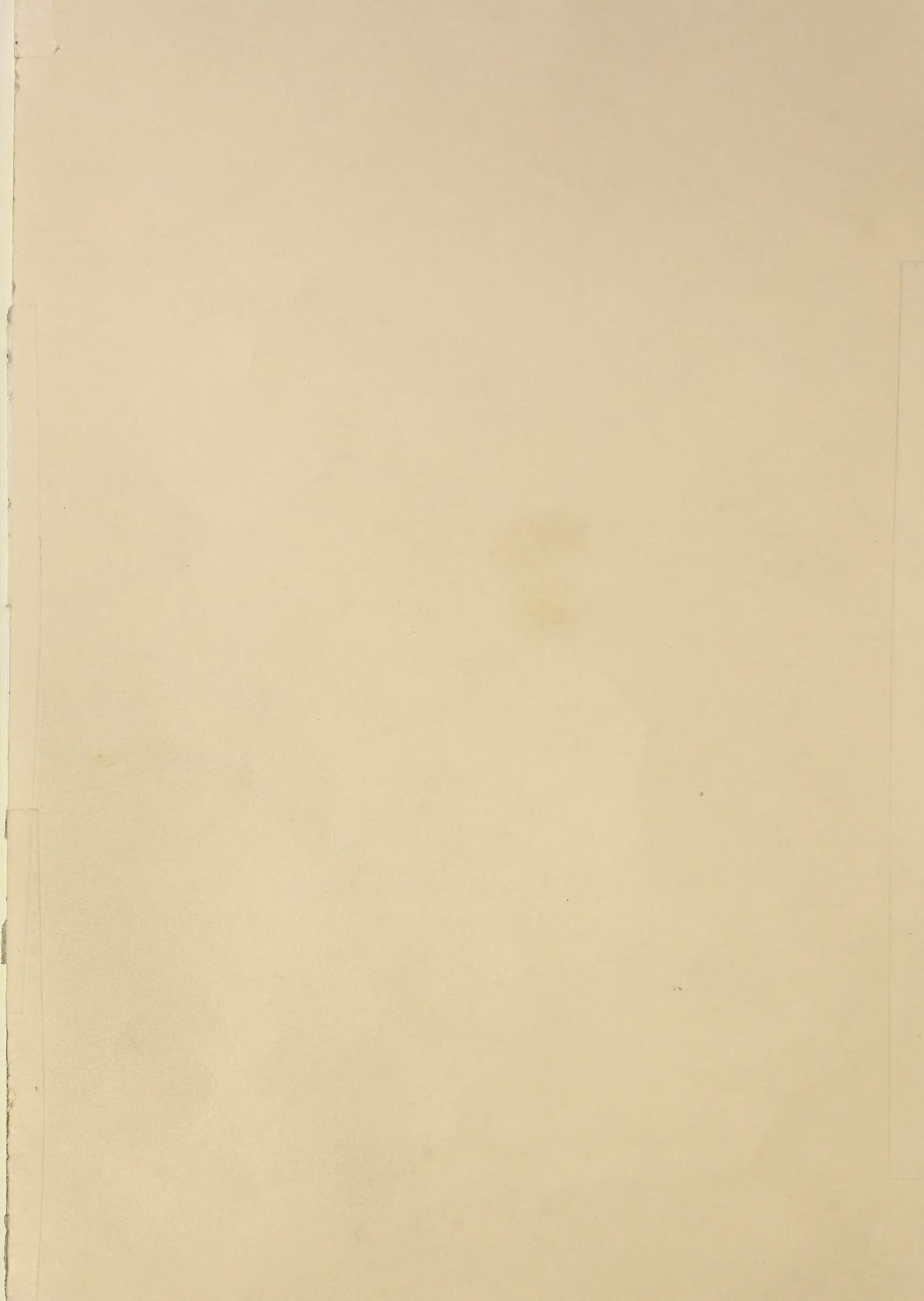


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TO:

FROM: LYNN S. LUDLOW, IRRIGATION SPECIALIST
ELECTRIC FARMING STAFF
ELECTRIC OPERATIONS AND LOANS DIVISION

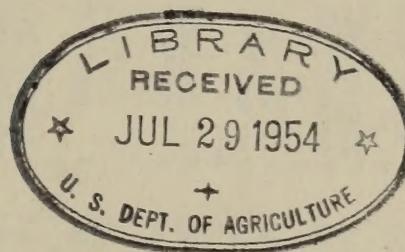
SUBJECT: IRRIGATION ANALYSIS
1953 OPERATING SEASON

THE ATTACHED IS AN ANALYSIS OF ELECTRIC PUMP IRRIGATION DURING THE 1953 SEASON. IT DOES NOT INCLUDE ALL BORROWERS WHICH SERVED PUMP IRRIGATION INSTALLATIONS BUT THOSE IN WHICH THE PUMP IRRIGATION LOAD PLAYED AN IMPORTANT PART IN THEIR OPERATION.

THE FIRST LINE INDICATES BORROWER AND DATA AS TAKEN FROM LATEST FEASIBILITY STUDY. THE SECOND LINE FOR EACH BORROWER PROVIDES DATA TAKEN FROM THE 1953 OPERATING REPORTS SUBMITTED TO THE RURAL ELECTRIFICATION ADMINISTRATION. THE LAST COLUMN ON THE SHEET SHOWS TOTAL LOAN FUNDS AND THE PORTION OF LOAN FUNDS WHICH WERE FOR GENERATION OR TRANSMISSION FACILITIES.

DUE TO THE EXTREME DROUGHT CONDITIONS IN MANY AREAS OF THE UNITED STATES DURING 1953, THE REVENUE AND USE OF IRRIGATION PUMPS EXCEEDED WHAT CAN BE ANTICIPATED UNDER NORMAL WEATHER CONDITIONS.

ATTACHMENT



PUMP IRRIGATION ANALYSIS
FOR 1953

APPROVED DATE LATEST LOAN	COOPERATIVE DESIGNATION	NO. INSTALLED IRRIGATION STATIONS	TOTAL KWH IRRIGATION	TOTAL KWH SYSTEM	% OF TOTAL USED BY IRR.	REVENUE FROM IRRIGATION	TOTAL REVENUE	% TOTAL FROM IRRIGATION	% TOTAL FROM TOTAL LOAN
7-20-53	ARIZ. 13 NAVAJO FS 1953 SEASON	25 24	300,000 250,659	1,383,300 8,410,319	2.2 3.0	\$ 8,775 \$ 11,006	\$ 438,600 \$ 291,985	2.0 3.8	3,248,000 518,300
4-7-52	ARIZ. 14 COCHISE FS 1953 SEASON	500 564	18,000,000 20,022,076	31,867,817 33,413,651	56.4 59.9	\$ 315,000 \$ 359,625	\$ 747,851 \$ 753,124	42.1 47.8	4,637,820 2,445,088
12-30-49	ARIZ. 17 GRAHAM 1953 SEASON	202 370	4,464,200 10,999,984	16,262,200 20,222,548	27.5 54.4	\$ 111,403 \$ 200,328	\$ 379,624 \$ 444,124	29.4 45.1	3,129,114 1,897,000
1-21-53	ARIZ. 20 PIMA 1953 SEASON	96 81	43,200,000 27,335,734	50,919,900 33,669,301	84.8 81.2	\$ 448,800 \$ 401,677	\$ 853,755 \$ 553,639	75.9 72.6	4,318,411 1,287,012
1-15-51	ARIZ. 21 YAVAPAI 1953 SEASON	24 22	432,000 171,109	1,616,700 1,062,585	26.7 16.1	\$ 9,120 \$ 4,014	\$ 58,210 \$ 40,014	15.7 10.0	550,752
1-17-51	ARIZ. 22 KINGMAN 1953 SEASON	40 33	600,000 538,398	5,295,612 2,023,970	11.3 26.6	\$ 17,904 \$ 16,189	\$ 151,506 \$ 76,013	11.8 21.3	777,000
5-6-52	ARIZ. 23 GREENLEE 1953 SEASON	75 65	1,800,000 1,601,647	2,939,700 3,348,395	61.2 47.8	\$ 43,500 \$ 27,363	\$ 101,275 \$ 116,738	43.0 23.4	750,000 283,000
3-11-53	No. 4 EDDY 1953 SEASON	769 672	46,140,000 36,365,968	54,013,340 42,797,639	85.4 85.0	\$ 640,193 \$ 515,424	\$ 860,614 \$ 713,290	74.4 72.3	3,801,000 43,000
5-25-53	No. 8 ROOSEVELT 1953 SEASON	607 625	7,284,000 9,215,358	14,569,207 15,461,091	50.0 59.6	\$ 158,791 \$ 180,983	\$ 378,198 \$ 387,131	42.0 46.1	2,762,000 167,500
7-17-53	No. 12 OTERO 1953 SEASON	88 59	2,901,550 1,710,276	10,757,030 5,945,972	27.0 28.8	\$ 69,932 \$ 31,521	\$ 403,644 \$ 199,043	17.3 15.8	2,728,183 179,183
5-20-53	No. 21 LINCOLN 1953 SEASON	81 75	4,237,000 2,190,661	13,872,190 7,703,255	30.5 28.4	\$ 96,900 \$ 40,717	\$ 619,056 \$ 340,526	15.7 12.0	4,283,500 972,400

NOTE: FIRST ROW OF FIGURES ARE TOTALS TAKEN FROM DATA INCLUDED IN FEASIBILITY STUDY FROM LATEST LOAN.
SECOND ROW OF FIGURES ARE TOTALS OF 1953 OPERATING SEASON BASED UPON OPERATING REPORTS SUBMITTED TO REA.

PUMP IRRIGATION ANALYSIS
FOR 1953

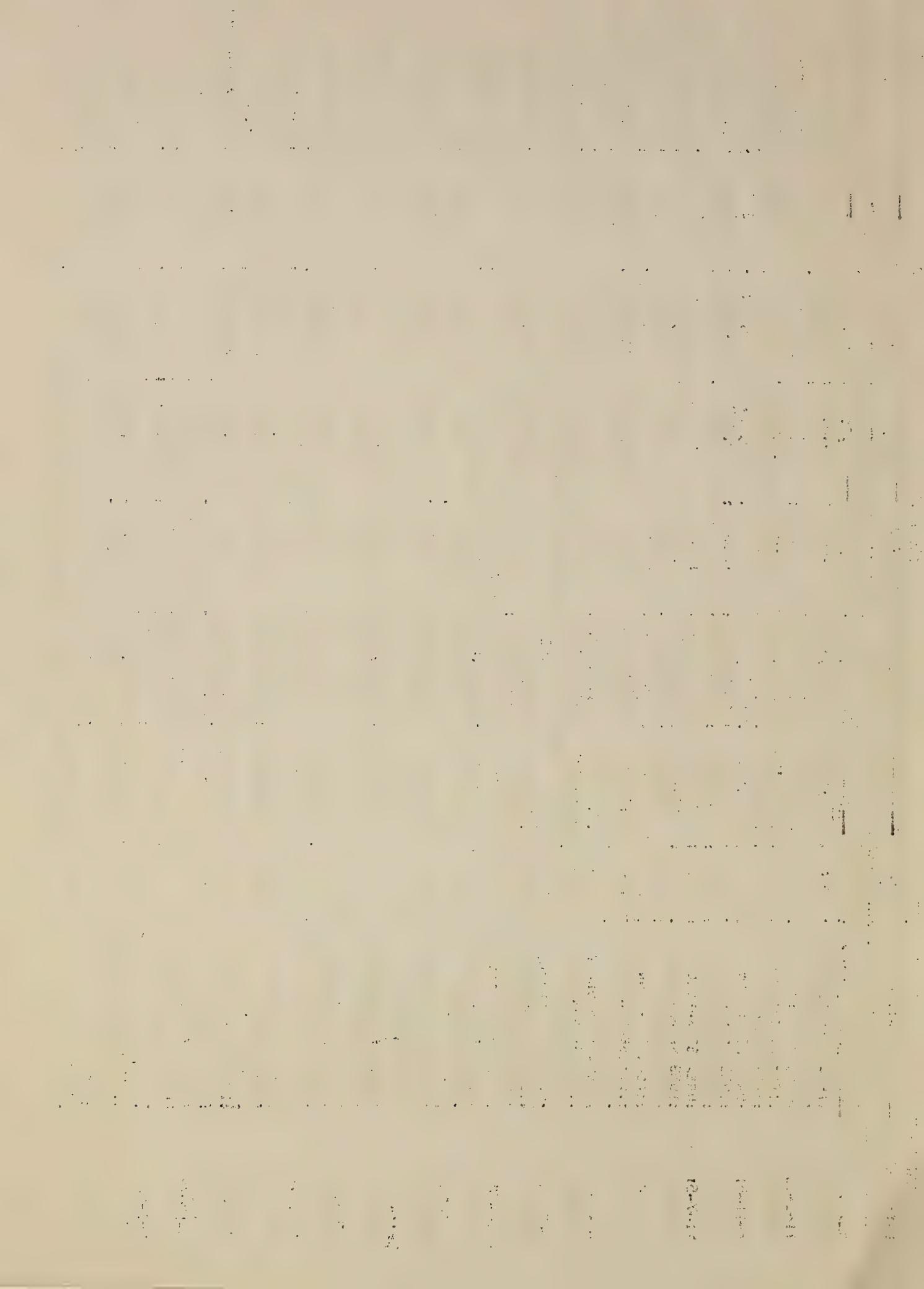
APPROVED DATE	COOPERATIVE DESIGNATION	NO. INSTALLATIONS	TOTAL KWH IRRIGATION	% OF TOTAL SYSTEM USED BY IRR.	REVENUE FROM IRRIGATION	TOTAL REVENUE	% TOTAL FROM IRRIGATION	% TOTAL FROM TOTAL LOANS
7-20-53	ARIZ. 13 NAVAJO FS 1953 SEASON	25 24	300,000 250,659	13,383,300 8,410,319	2.2 3.0	\$8,775 \$11,006	\$438,600 \$291,985	2.0 3.8
4-7-52	ARIZ. 14 COCHISE FS 1953 SEASON	500 564	48,000,000 20,022,076	31,887,817 33,413,651	56.4 59.9	\$315,000 \$359,625	\$747,851 \$753,124	42.1 47.8
12-30-49	ARIZ. 17 GRAHAM 1953 SEASON	202 370	4,464,200 10,999,984	16,262,200 20,222,548	27.5 54.4	\$111,403 \$200,328	\$379,624 \$444,124	29.4 45.1
1-21-53	ARIZ. 20 PIMA 1953 SEASON	96 81	43,200,000 27,335,734	50,919,900 33,669,301	84.8 81.2	\$448,800 \$401,677	\$853,755 \$553,639	75.9 72.6
11-15-51	ARIZ. 21 YAVAPAI 1953 SEASON	24 22	432,000 171,109	1,616,700 1,062,585	26.7 16.1	\$9,120 \$4,014	\$58,210 \$40,014	15.7 10.0
11-27-51	ARIZ. 22 KINGMAN 1953 SEASON	40 33	600,000 538,398	5,295,612 2,023,970	11.3 26.6	\$17,904 \$16,189	\$151,506 \$76,013	11.8 21.3
5-6-52	ARIZ. 23 GREENLEE 1953 SEASON	75 65	1,800,000 1,601,647	2,939,700 3,348,395	61.2 47.8	\$43,500 \$27,363	\$101,275 \$116,738	43.0 23.4
3-11-53	IN. M. 4 EDDY 1953 SEASON	769 672	46,140,000 36,365,968	54,013,340 42,797,639	85.4 85.0	\$640,193 \$515,424	\$860,614 \$713,290	74.4 72.3
5-25-53	IN. M. 8 ROOSEVELT 1853 SEASON	607 625	7,284,000 9,215,358	14,569,207 15,461,091	50.0 59.6	\$158,791 \$180,983	\$378,198 \$387,131	42.0 46.1
7-17-53	IN. M. 12 OTERO 1953 SEASON	88 59	2,901,550 1,710,276	10,757,030 5,945,972	27.0 28.8	\$69,932 \$31,521	\$403,644 \$199,043	17.3 15.8
5-20-53	IN. M. 21 LINCOLN 1953 SEASON	81 75	4,237,000 2,190,661	13,872,190 7,703,255	30.5 28.4	\$96,900 \$40,717	\$619,056 \$340,526	15.7 12.0

NOTE: FIRST ROW OF FIGURES ARE TOTALS TAKEN FROM DATA INCLUDED IN FEASIBILITY STUDY FROM LATEST LOAN.

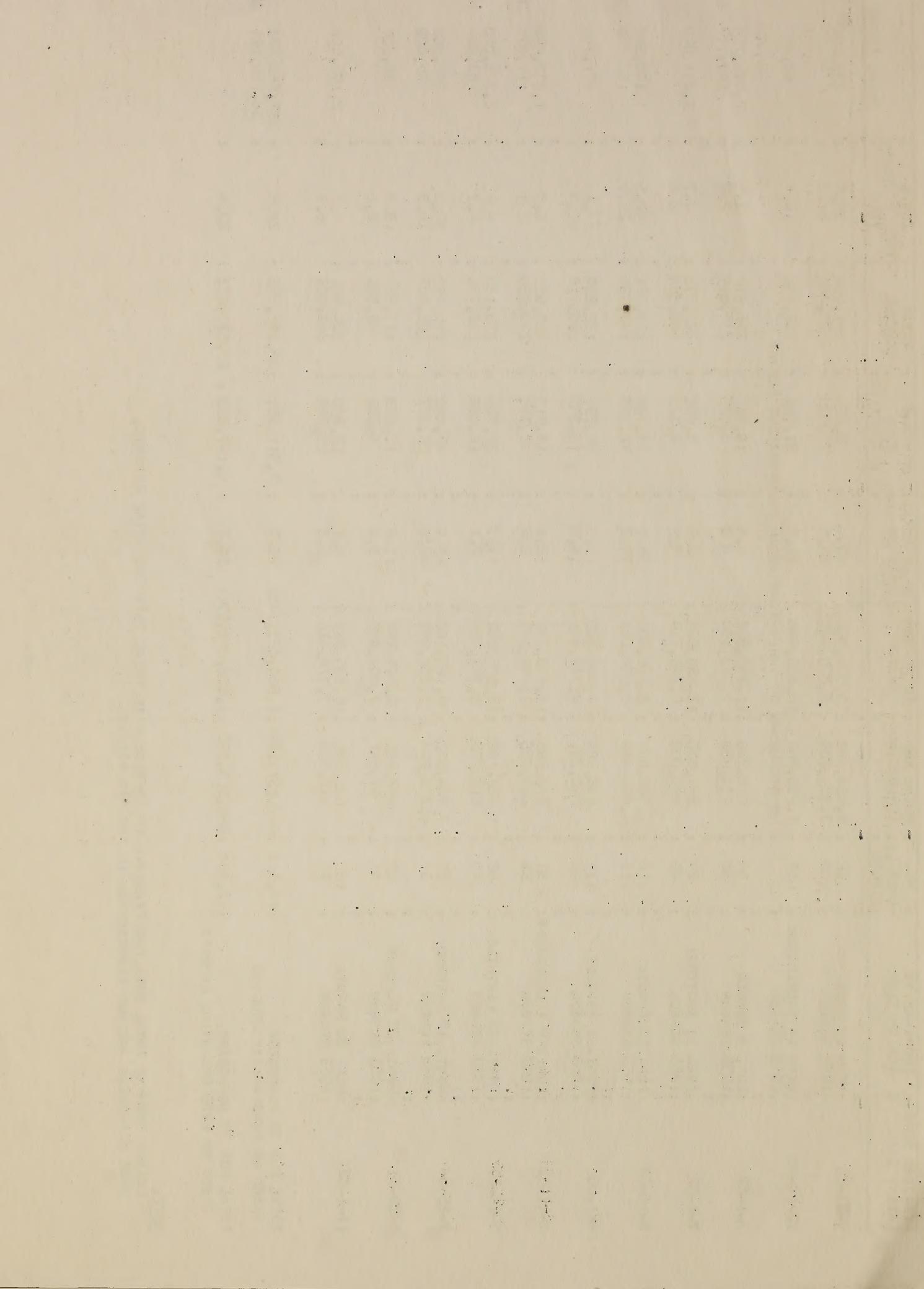
SECOND ROW OF FIGURES ARE TOTALS OF 1953 OPERATING SEASON BASED UPON OPERATING REPORTS SUBMITTED TO REA.

APPROVED DATE	COOPERATIVE LATEST LOAN	DESIGNATION	NO.	TOTAL KWH INSTALLATION	% OF TOTAL: IRRIGATION	TOTAL KWH SYSTEM	% OF TOTAL: USED BY IRR.	REVENUE FROM IRRIGATION	% OF TOTAL: REVENUE	FROM IRRIGATION										
12-22-52	TEXAS 145 DALLAM 1953 SEASON		70	2,800,000	12,444,400	22.5	49,000	357,127	13.7	188,076	665,000	6&T	2,665,000	18.1	188,076	665,000	6&T	304,928		
11-3-53	ARK. 11 JACKSON 1953 SEASON		86	3,870,000	11,451,120	33.8	68,800	323,297	21.3	60,136	865,000			865,000						
4-18-52	ARK. 15 WOODRUFF 1953 SEASON		185	7,552,382	26,095,372	28.9	140,345	802,740	17.5											
5-8-53	ARK. 30 ARKANSAS 1953 SEASON		90	4,950,000	9,066,156	54.6	95,623	280,045	34.1	50,356	208,208	24.2	208,208	34.1	208,208	34.1	208,208	34.1	208,208	34.1
6-9-52	COLO. 14 ALAMOSA 1953 SEASON		362	10,860,000	17,682,000	63.4	304,080	548,275	55.5	225,912	431,974	52.3	431,974	55.5	431,974	55.5	431,974	55.5	431,974	55.5
8-11-52	COLO. 15 MORGAN 1953 SEASON		451	7,851,023	13,357,082	58.8	380,56	880,341	56.2	380,56	703,771	54.1	703,771	56.2	703,771	56.2	703,771	56.2	703,771	56.2
10-5-51	COLO. 16 JEFFERSON 1953 SEASON		61	1,921,500	17,243,160	41.1	33,901	554,734	6.1	33,901	510,540	5.4	510,540	6.1	510,540	6.1	510,540	6.1	510,540	6.1
6-27-52	COLO. 17 PROWERS 1953 SEASON		180	1,350,000	34,442,100	3.9	28,350	102,907	2.6	28,350	668,974	8.5	668,974	2.6	668,974	2.6	668,974	2.6	668,974	2.6
7-2-53	COLO. 22 BOULDER 1953 SEASON		260	2,236,000	13,740,740	16.3	58,292	382,181	15.3	58,292	324,680	18.0	324,680	15.3	324,680	15.3	324,680	15.3	324,680	15.3
5-16-52	COLO. 29 PHILLIPS 1953 SEASON		57	684,000	12,157,860	5.6	26,950	492,202	5.5	26,950	478,695	5.0	478,695	5.5	478,695	5.5	478,695	5.5	478,695	5.5
6-3-52	COLO. 31 LARIMER 1953 SEASON		209	2,508,000	15,802,300	15.9	48,070	393,249	12.2	48,070	366,869	10.5	366,869	12.2	366,869	12.2	366,869	12.2	366,869	12.2
7-2-53	COLO. 37 DOUGLAS 1953 SEASON		204	1,691,315	14,066,470	12.0	38,341	25,844	6.8	38,341	25,844	8.2	25,844	6.8	25,844	6.8	25,844	6.8	25,844	6.8
11-2-51	KANS. 34 BARTON 1953 SEASON		124	1,056,108	19,415,889	5.4	38,671	688,071	4.6	38,671	470,970	4.5	470,970	4.6	470,970	4.6	470,970	4.6	470,970	4.6
1-15-53	KANS. 44 GRANT 1953 SEASON		60	2,160,000	27,828,000	7.7	37,200	805,027	1.7	37,200	541,466	4.5	541,466	1.7	541,466	1.7	541,466	1.7	541,466	1.7
5-16-49	KANS. 51 WICHITA 1953 SEASON		12	264,000	11,657,120	2.3	6,720	397,916	2.6	6,720	361,435	2.6	361,435	2.6	361,435	2.6	361,435	2.6	361,435	2.6
			66	875,005	18,848,483	4.6	24,563	9,338		24,563	9,338		9,338		9,338		9,338		9,338	
			12	432,530	9,232,871	4.7														
			171	4,630,000	15,549,500	29.8														
			159	3,965,338	22,126,067	17.9														

APPROVED DATE	COOPERATIVE LATEST LOAN	DESIGNATION	NO. INSTALLED IRRIGATIONS	TOTAL KWH IRRIGATION	% OF TOTAL SYSTEM	USED BY IRRIGATION	REVENUE FROM IRRIGATION	% TOTAL REVENUE FROM IRRIGATION	% TOTAL REVENUE FROM IRRIGATION	TOTAL LOANS
3-26-54	ORE. 24 TILLAMOOK 1953 SEASON		29 43	218,500 227,403	6,658,164 7,072,237	3.3 3.2	2,719 2,412	99,492 98,738	2.7 2.4	425,000
11-3-53	ORE. 26 WASCO 1953 SEASON		56 47	2,473,520 31,874,218	23,419,420 17,295,041	10.6 10.8	20,837 11,725	361,604 256,140	5.8 4.6	2,340,000 1,71,500 G&T
6-11-51	ORE. 29 MORROW 1953 SEASON		5 31	361,800 651,470	7,436,400 6,31,359	4.9 10.6	5,297 8,737	165,952 121,459	3.2 7.2	1,665,000 200,000 G&T
11-7-51	ORE. 37 WHEELER 1953 SEASON		35 5	630,000 61,077	6,163,750 2,170,974	10.2 2.8	6,300 828	173,116 72,822	3.6 1.1	2,155,000 741,160 G&T
7-1-52	WASH. 8 BENTON 1953 SEASON		230 154	7,176,000 4,711,289	340,586,640 25,208,685	17.7 18.7	94,116 45,604	547,538 374,139	17.2 12.2	3,894,500 325,600 G&T
9-2-53	WASH. 18 SPOKANE 1953 SEASON		210	4,410,000	360,52,860	7.3	53,676	820,593	6.5	4,418,280 195,925 G&T
8-27-53	WASH. 20 COLUMBIA 1953 SEASON		200 127	8,200,000 4,239,167	21,800,630 13,846,247	37.6 30.6	62,304 36,809	250,638 148,373	24.9 24.8	1,637,000
2-14-50	WASH. 28 KITTITAS 1953 SEASON		20	No Irrigation	No Feasibility Study	10.6	4,342	72,790	6.0	443,000
6-30-53	WASH. 31 CHELON 1953 SEASON		14 7	84,000 35,509	1,144,020 676,279	7.3 5.3	1,890 862	44,334 28,527	4.3 3.0	271,000
2-11-49	WASH. 32 OKANOGAN 1953 SEASON		34	No Irrigation	No Feasibility Study	12.5	3,398	48,625	7.0	225,000
6-9-52	WASH. 35 PENDOREILLE 1953 SEASON		68 32	816,000 153,347	9,631,800 4,871,868	8.5 3.1	19,788 3,417	211,523 117,633	9.4 2.9	1,511,000
10-14-52	WASH. 36 ADAMS 1953 SEASON		263 110	15,378,154 4,982,472	38,735,782 18,059,905	39.7 27.6	123,621 44,817	447,309 249,675	25.9 18.0	3,397,000
6-28-52	WASH. 37 LINCOLN 1953 SEASON		28 22	448,000 1,128,643	14,367,100 11,805,663	3.1 9.6	6,517 8,619	244,792 224,474	2.7 3.8	1,642,000 43,400 G&T
5-10-49	WASH. 39 NESEPELEM 1953 SEASON		20	No Irrigation	No Feasibility Study	4.6	3,217	87,813	3.7	521,000
6-1-53	WASH. 46 FERRY D.O.P. 1953 SEASON		34 25	850,000 297,468	17,082,211 9,380,734	5.0 3.2	8,789 5,493	309,177 212,104	2.8 2.6	1,720,000 252,540 G&T
7-1-52	WASH. 47 D.O.P. 1953 SEASON		429	No Breakdown	No Breakdown	17.8	91,223	725,235	12.6	4,197,000 616,500 G&T



NOTE: DO NOT COMPARE TOTAL DATA FOR FEASIBILITY STUDIES WITH TOTAL DATA OPERATING REPORTS. SAME BORROWERS ARE NOT REPRESENTED IN THE TWO TOTALS.



APPROVED DATE	COOPERATIVE DESIGNATION	NO. OF INSTALLATIONS	TOTAL KWH USED BY IRRIGATION SYSTEM	% OF TOTAL KWH USED BY IRRIGATION SYSTEM	TOTAL REVENUE FROM IRRIGATION	% OF TOTAL REVENUE FROM IRRIGATION												
1-15-51	WYO. 6 GOSHEN 1953 SEASON	440	1,141,000	8,521,540	13.4	25,186	262,722	9.6	1,859,600	9.7	21,474	222,233	9.7	6,687,229	15.9	1,066,155	8,521,540	1,141,000
4-3-52	WYO. 14 LARAMIE 1953 SEASON	220	4,180,000	15,587,260	26.8	82,500	431,083	19.6	3,057,000	16.3	74,455	456,479	16.3	14,937,000	22.2	3,315,875	4,180,000	
1-17-50	NEB. 1 ROOSEVELT 1953 SEASON	13	191,100	3,102,900	6.2	3,503	106,251	3.3	547,998	6.0	5,820	97,638	6.0	3,561,394	7.2	257,736	191,100	
9-18-52	NEB. 49 HOWARD 1953 SEASON	58	261,000	10,775,880	2.4	11,165	334,298	3.3	1,995,595	4.4	8,655	195,945	4.4	6,458,281	4.7	302,120	261,000	
7-17-51	NEB. 76 SOUTHERN 1953 SEASON	474	1,422,000	22,250,754	6.4	45,030	703,557	6.4	4,037,405	11.4	81,302	713,916	11.4	23,856,594	13.5	3,211,182	1,422,000	
7-10-53	NEB. 78 DAWSON 1953 SEASON	617	9,702,000	39,484,220	24.6	293,490	1,048,209	30.0	6,933,234	27.1	239,329	883,626	27.1	32,202,171	30.2	9,714,888	9,702,000	
7-3-53	NEB. 83 CUSTER 1953 SEASON	78	780,000	25,625,795	3.1	27,300	973,162	2.8	7,308,000	3.4	6,832	473,026	3.4	10,732,552	6.8	725,406	780,000	
7-10-53	NEB. 84 GRANT 1953 SEASON	50	900,000	9,287,760	9.7	22,500	371,961	6.1	3,024,000	6.1	22,694	346,539	6.5	9,000,000	9.7	10,398,880	9.8	
2-20-50	NEB. 86 DUNDY 1953 SEASON	63	1,017,951	10,398,880	9.8	22,694	346,539	6.5	2,982,523	357,000	6,832	34,500	530,724	6.5	10,398,880	9.8	1,017,951	1,017,951
7-10-53	NEB. 95 CHEYENNE 1953 SEASON	338	1,380,000	24,988,018	5.5	34,500	530,724	6.5	3,449,000	2.2	11,697,550	313,553	2.2	284,662	2.4	11,697,550	1,380,000	
3-25-49	NEB. 98 FURNAS D.O.P.	50	500,000	8,001,500	6.2	12,000	335,542	3.6	2,772,000	2.6	6,799	257,623	2.6	5,900,497	3.7	216,546	500,000	
10-7-52	ORE. 4 LINCOLN 1953 SEASON	146	1,591,400	71,757,360	2.2	30,207	891,119	3.4	5,539,600	3.8	3,0	669,635	3.8	43,989,070	3.0	1,315,141	1,591,400	
6-12-50	ORE. 14 UMATILLA 1953 SEASON	181	1,315,141	43,989,070	2.0	25,476	116,899	7.1	1,173,000	7.1	8,292	116,899	7.1	843,9412	16,135,294	1,315,141	1,315,141	
11-24-53	ORE. 17 DOUGLAS 1953 SEASON	182	2,395,000	38,672,488	6.2	34,254	594,305	5.8	2,950,673	3.5	771,941	424,783	3.5	25,821,836	3.0	25,821,836	2,395,000	
4-1-52	ORE. 21 COOS 1953 SEASON	69	719,325	31,927,430	2.3	17,081	927,320	1.8	4,224,000	2.1	402,751	9,736	2.1	25,886,646	1.6	1,666,646	1.6	

